

DE-STA-CO automation power clamps are designed with a view to the requirements of the automotive and sheet processing industries. They are the perfect choice when it comes to clamping, holding and positioning metal sheets and other components on and in jigs. The models whose mechanism is encapsulated are particularly well suited to the long cycles occurring in welding systems. Sensors check if a clamping arm is actuated or released. This optional feature is a distinct advantage in automatic production systems.

All clamps share one common feature:

The clamps are designed to last for millions of cycles if the relevant application complies with the concept guideline.

The units described in this section are special-purpose devices which have found their way into niche applications.



Series 82D40-2/82D63-4

- Automation power clamps, enclosed and narrow design for 2 clamping arms

Models: 82D40-2...
82D63-4...



82D40-223C900B
Base model without clamping arms

Application:

Clamping, holding, gripping and positioning of metal sheets and other parts, mainly in jigs and handling systems.

Key areas of application:

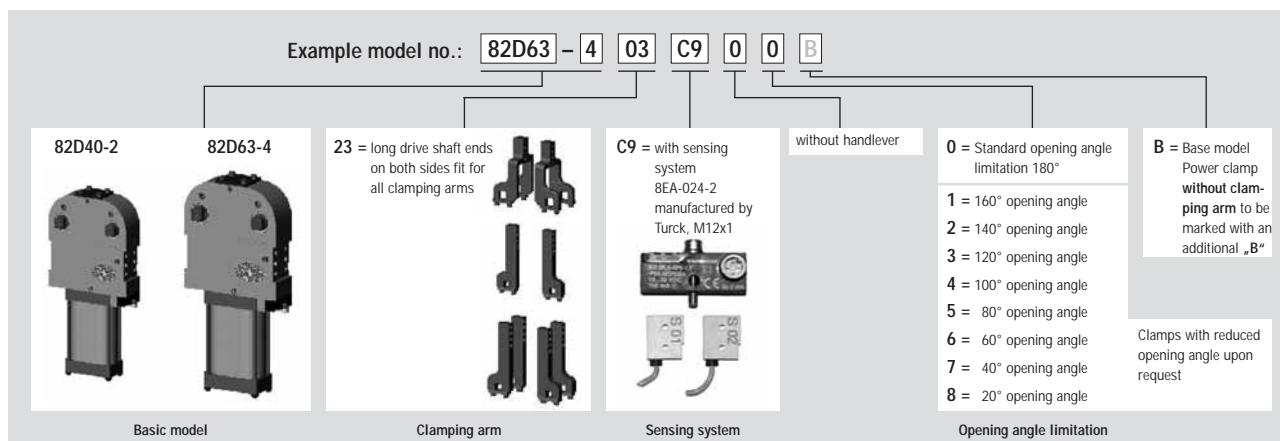
Automotive manufacturing, sheet processing industry, jig and general mechanical engineering.

Features:

- compact, enclosed design
- narrow design
- adapts to various holding arm variants
- high accuracy of positioning due to internal holding arm stopper
- 2 lateral and 1 front mounting areas
- low weight (aluminium body)
- integrated inductive sensing module with LED display
- cylinder diameter 40 mm or 64 mm

Model no. with ind. sensing connector M12x1, fixed (Turck)	Clamping position	Standard opening angle	Driven shaft for clamping arm variants	Max. holding torque [Nm]	Clamping torque at 5 bar [Nm]	Cylinder Ø	Air consumption per double stroke at 5 bar [dm³]	Weight ~ [kg]
82D40-223C900B	vertical	180°	lateral, both sides; U-type clamping arms	55	55	40	1,2	2,5
82D63-423C900B	vertical	180°	lateral, both sides; U-type clamping arms	120	120	63	3,8	4,5

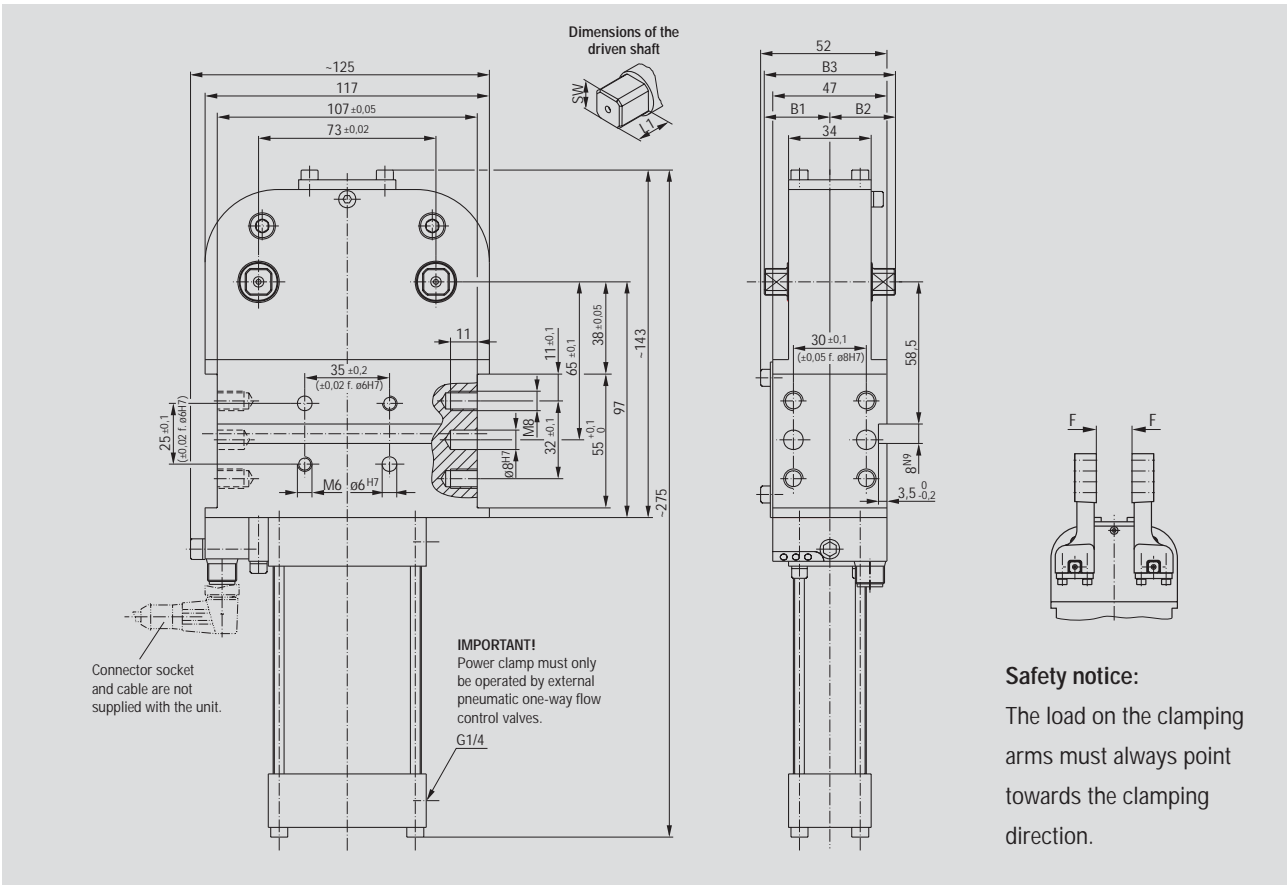
Numbering code for 82D40/63



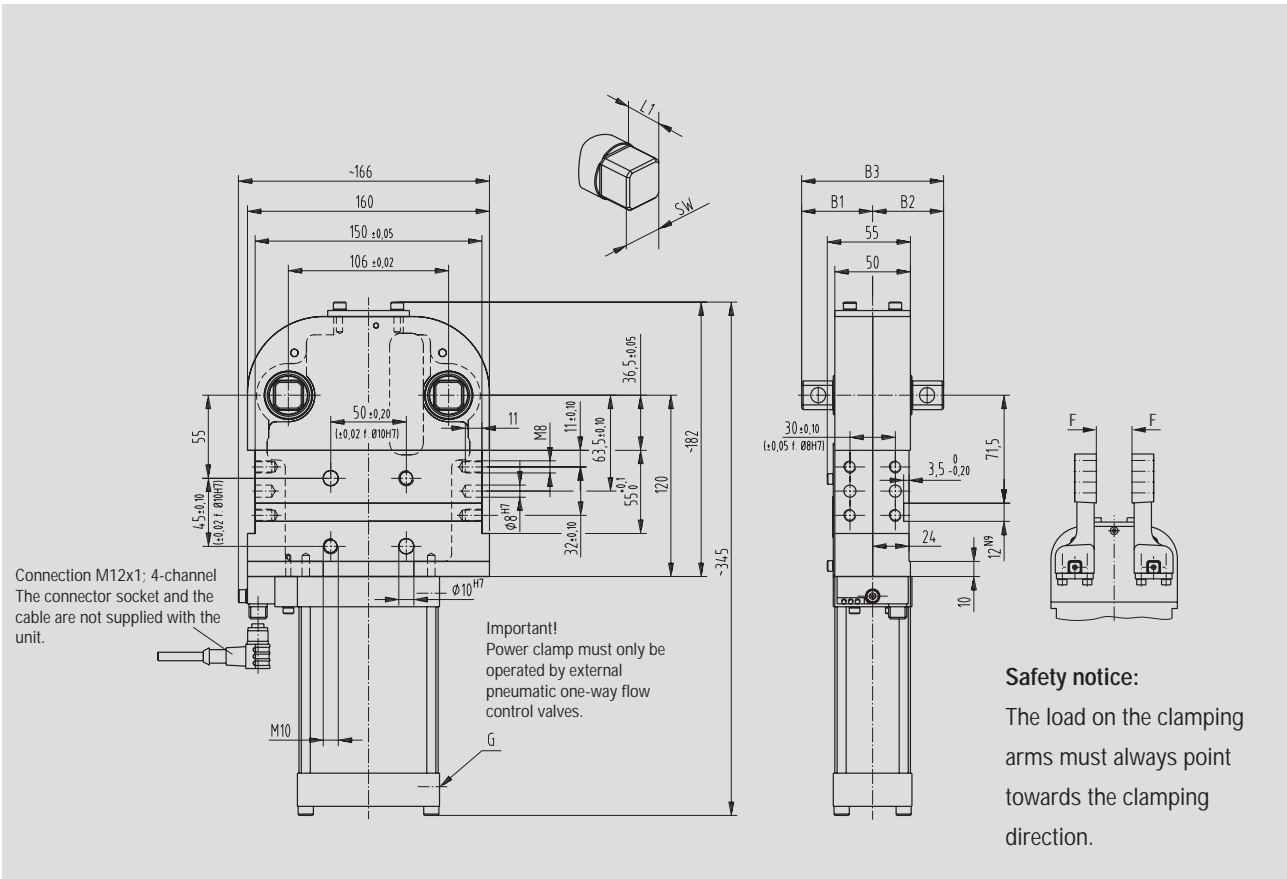
Technical data of 82D40-223C900B and 8263-423C900B

Model no. w/ind. sensing; connector M12x1, fixed	B1	B2	B3	L1	SW	G
82D40-223C900B	30	30	60	12,5	11	1/4
82D63-423C900B	47	47	94	21	19	1/4

82D40-223C900B



82D63-423C900B



Series 82D40-2/82D63-4



Base model with 2 U-type clamping arms, small gap between clamping arms

■ Clamping arm variants for 82D40-2

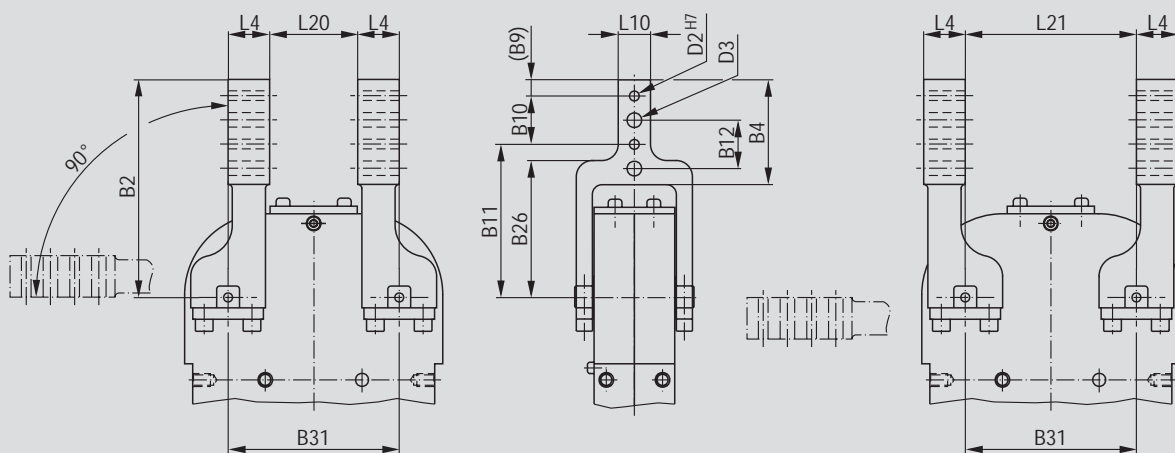
Clamping arm variant U-type central clamping arm

Technical data of U-type central clamping arms

Model no.	Order no. for U-type clamping arm set (1 clamping arm)	Clamping position	Standard opening angle	B2	B4	B9	B10 ±0,02	B11 +0,1	B12 ±0,2	B26	B31 ±0,02	D2 H7 ∅	D3 ∅	L4	L10 -0,1	L20	L21
82D40-223C900B	8JG-065-2-01	vertical	180°	105	45,3	6	20	79	20	68,2	73	6	7	20	12	33	73

Drawing shows standard mounting (L20)

Drawing shows further mounting possibility (L21)



■ Clamping arm variants for 82D63-4

Clamping arm variant U-type central clamping arm

Base model with 2 U-type clamping arms, small gap between clamping arms

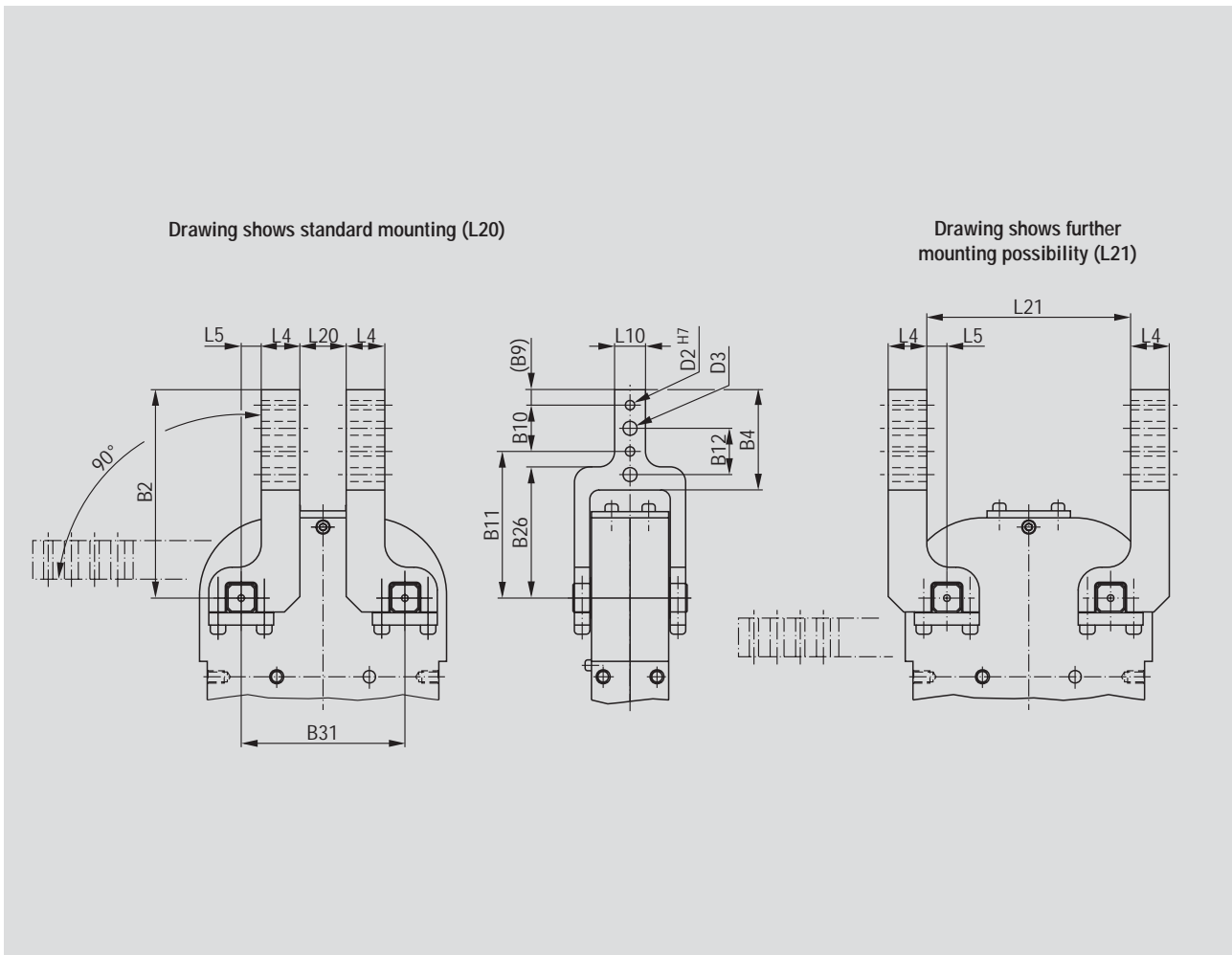


Technical data of U-type central clamping arms

Model no.	Order no. for U-type clamping arm set (1 clamping arm)	Clamping position	Standard opening angle	B2	B4	B9	B10 ±0,02	B11 +0,1	B12 ±0,2	B26
82D63-423C900B	8JG-069-1-01	vertical	180°	144	64,3	9	30	105	30	95

Model no.	Order no. for U-type clamping arm set (1 clamping arm)	B31 ±0,02	D2 H7	D3	L4	L5*	L10	L20	L21
82D63-423C900B	8JG-069-1-01	106	6	9	28	15	20	20	136

* Tolerance applies to 80 mm gap, measured from fulcrum



Series 82D40-2/82D63-4



Base model with 4 lateral clamping arms, large gap between clamping arms

■ Clamping arm variants for 82D40-2

Clamping arm variant

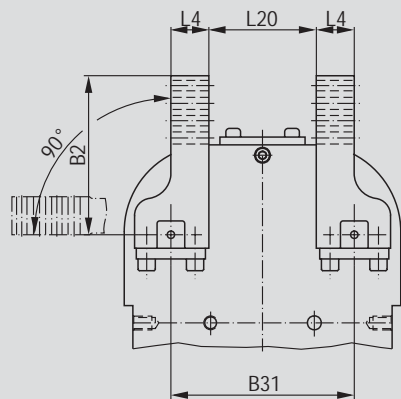
- Lateral clamping arm left
- Lateral clamping arm right
- Lateral clamping arm both sides

Technical data of lateral clamping arms

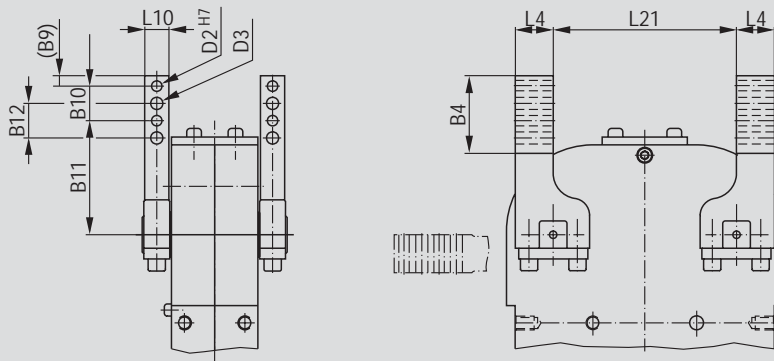
Model no.	Clamping arm variant	Order no. for 1 set of lateral clamping arms	Clamping position	Standard opening angle	B2	B4	B9	B10 ±0,02	B11 +0,1	B12 ±0,2
82D40-223C900B	lateral, left lateral, right lateral, both sides	8JG-066-1-01	vertical	180°	105	45	6	20	79	20

Model no.	Clamping arm variant	Order no. for 1 set of lateral clamping arms	B31 ±0,02	D2 H7 Ø	D3 Ø	L4	L10 -0,1	L20	L21
82D40-223C900B	lateral, left lateral, right lateral, both sides	8JG-066-1-01	73	6	7	20	12	33	73

Drawing shows standard mounting (L20) with four lateral clamp arms



Drawing shows further mounting possibility (L21)



■ Clamping arm variants for 82D63-4

Clamping arm variant

- Lateral clamping arm left
- Lateral clamping arm right
- Lateral clamping arm both sides

Base model with 4 lateral clamping arms, large gap between clamping arms

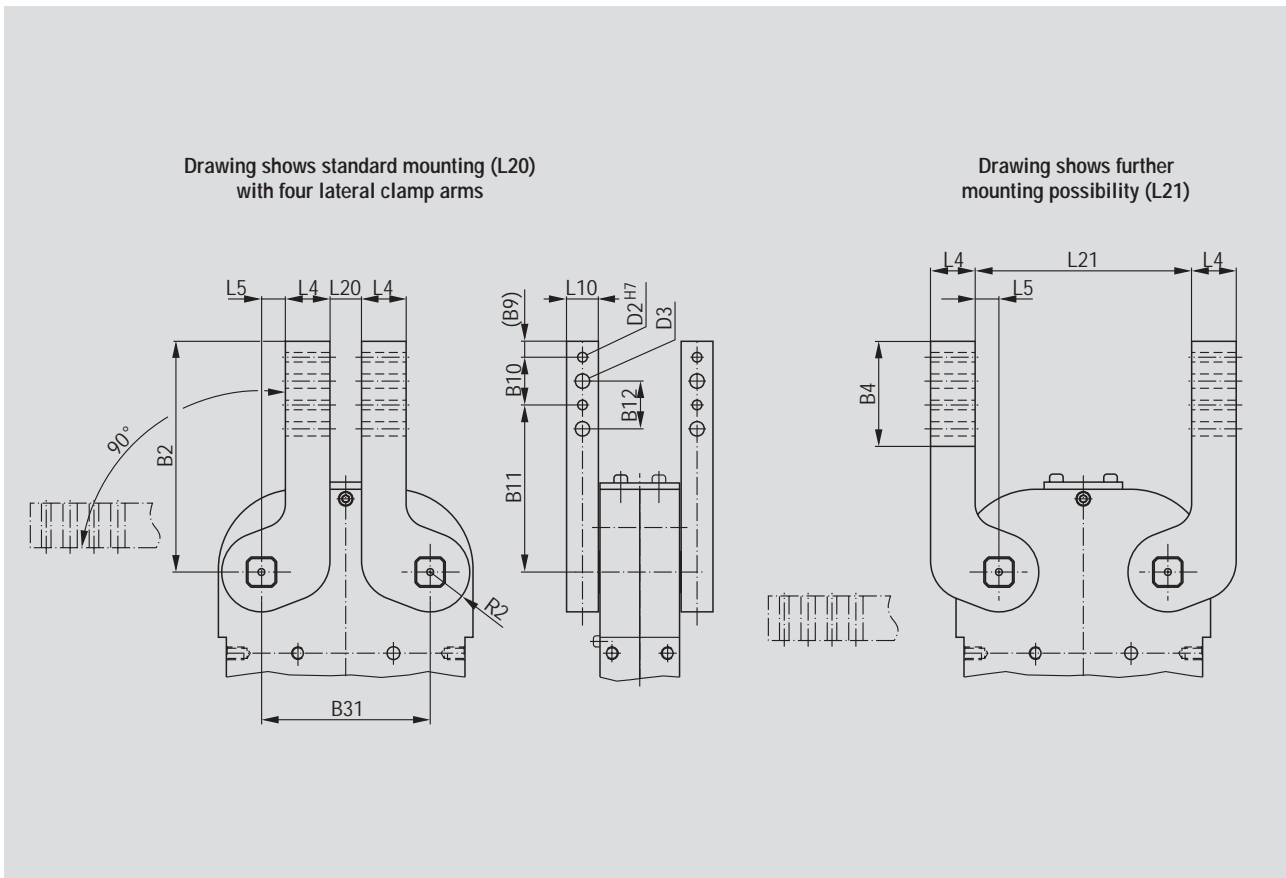


Technical data of lateral U-type clamping arms

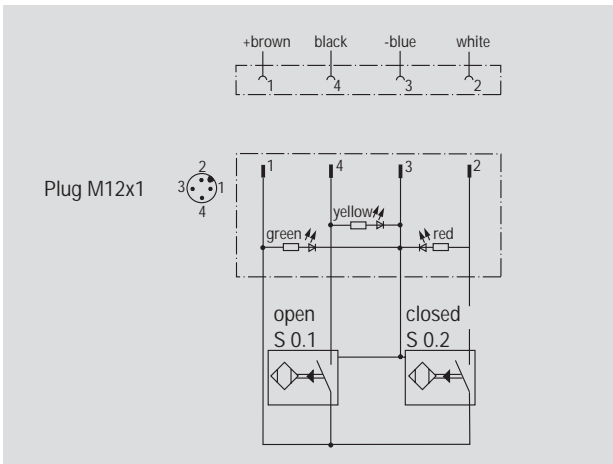
Model no.	Clamping arm variant	Order no. for 1 set of lateral clamping arms	Clamping position	Standard opening angle	B2	B4	B9	B10 ±0,02	B11 +0,1	B12 ±0,2
82D63-423C900B	lateral, left	8JG-070-1-01	vertical	180°	144	74	9	30	105	30
	lateral, right									
	lateral, both sides									

Model no.	Clamping arm variant	Order no. for 1 set of lateral clamping arms	B31 ±0,02	D2 H7 Ø	D3 Ø	L4	L5*	L10 -0,1	L20	L21	R2
82D63-423C900B	lateral, left	8JG-070-1-01	106	6	9	28	15	20	20	136	28
	lateral, right										
	lateral, both sides										

*Tolerance applies to 80 mm gap, measured from fulcrum



Series 82D40-2/82D63-4



Wiring diagram of the electrical sensing system

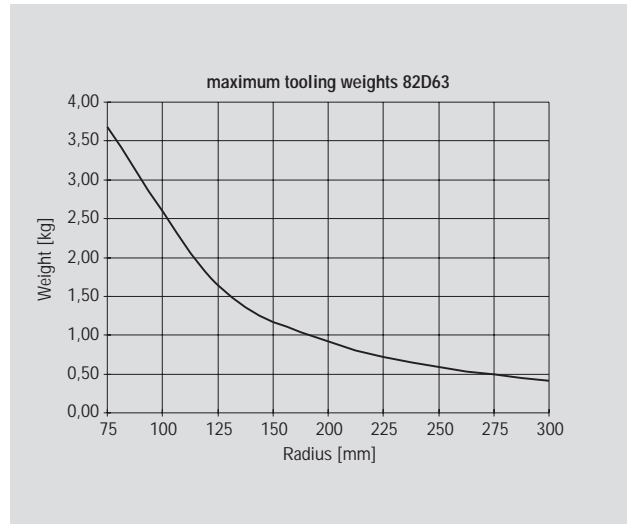
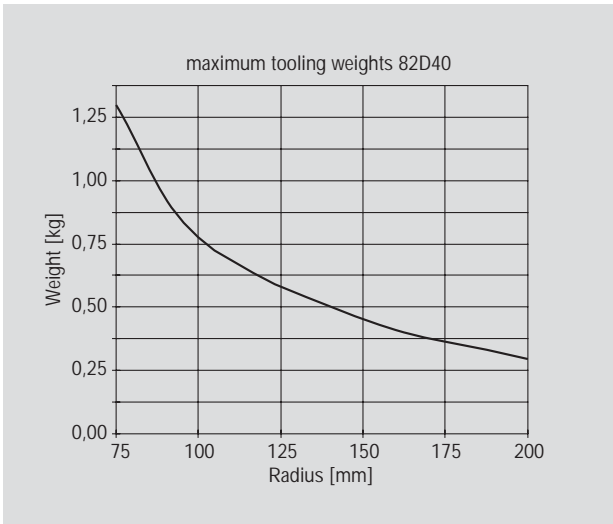
Sensing system immune to interference from d.c. arc welding and a.c. arc welding

Inductive design:

- C9: ind. with LEDs, plug connector M12X1, fixed (Turck)

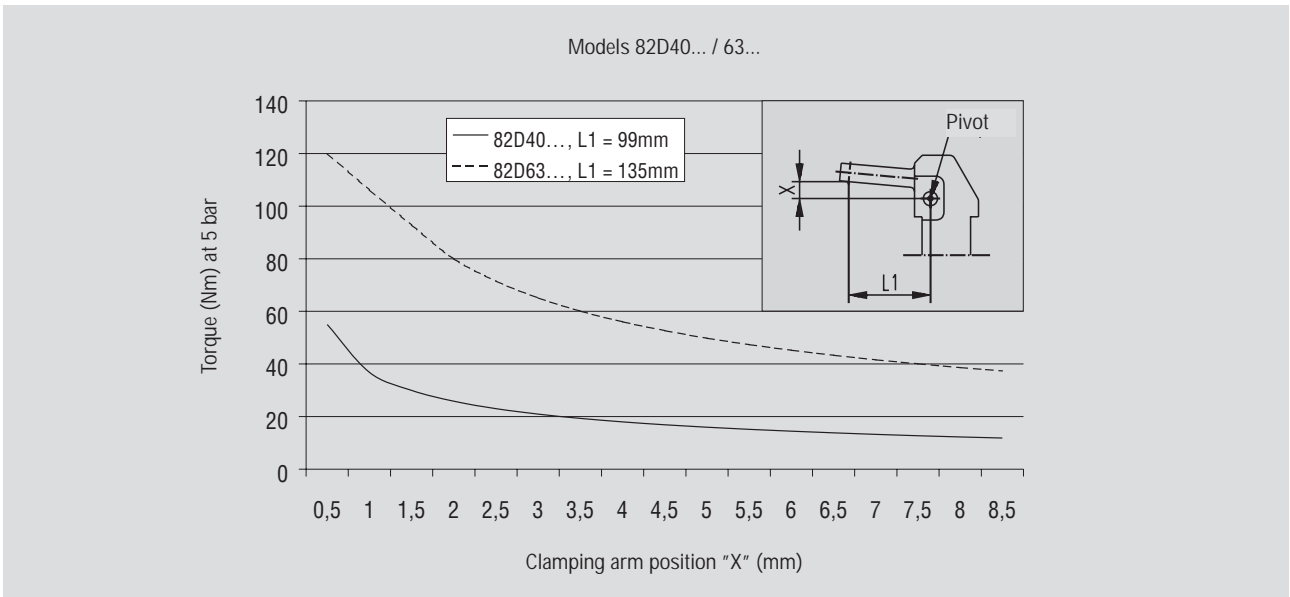
Pin assignment

Concept guideline (with reference to axis of clamping arm rotation)



All details apply under an air pressure of 6 bar and opening and closure times of 1 second each

Diagram of clamping force (at 5 bar)

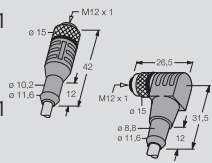


Clamping arms as accessories

Specification		Structural component		Comment
		82D40-223C900B Order no. for set	82D63-423C900B Order no. for set	
Clamping arms				
Clamping arm variant	Clamping position			
U-central	vertical	8JG-065-2-01	8JG-069-1-01	sets of U-type clamping arms consist of clamping arm, links and screws
lateral right/left	vertical	8JG-066-1-01¹⁾	8JG-070-1-01²⁾	sets of lateral clamping arms consist of ¹⁾ clamping arm, links and screws ²⁾ clamping arm and set screws you need 2 sets of clamping arms
lateral both sides	vertical	8JG-066-1-01¹⁾	8JG-070-1-01²⁾	you need 4 sets of clamping arms

Accessories

Specification	Structural component	
	82D40-2..C900 Order no.	82D63-4..C900 Order no.
Connector cable (1 connector socket & 5 m cable)		
Connector socket M12x1 straight, 5-pin	8EL-002-1	8EL-002-1
Connector socket M12x1 angular, 4-pin	8EL-003-1	8EL-003-1
Shim plates for clamping arm		
Thickness 0,1 mm	82ZB-SH 4001	82ZB-SH 5001
Thickness 0,2 mm	82ZB-SH 4002	82ZB-SH 5002
Thickness 0,5 mm	82ZB-SH 4005	82ZB-SH 5005
Thickness 1,0 mm	82ZB-SH 4010	82ZB-SH 5010
Thickness 2,0 mm	82ZB-SH 4020	82ZB-SH 5020
Opening angle limitation	8CE-082-1	8CE-081-1
Standard	180°	14,4 mm
	160°	15,1 mm
	140°	18,5 mm
	120°	22,2 mm
	100°	25,8 mm
	80°	28,0 mm
	60°	33,0 mm
	40°	37,0mm
	20°	41,8 mm



Spare parts

Specification	Order no. for structural component	
	82D40-2	82D63-4
Cylinder	8PW-016-2	8PW-024-2
Seal kit	8PW-016-1-00	8PW-024-1-00
Integrated sensing system C9	8EA-021-2	8EA-024-2
Connector plug M12x1, fixed (Turck)		

Series GR100/125/160/200

■ Swivel units

Application:

Swivelling heavy components or devices into position for machining or fixturing.

Key areas of application:

Automotive manufacturing, sheet processing industry, jig and general mechanical engineering.

Features:

- control pin for visually verifying the end position at the over-centre point
- locking washers to stop the arm from twisting away from the shaft
- set stop to ensure the precision of repetition independent of the load on the arm
- the sensing set with two inductive switches and a block of LEDs can be attached to the left or right side of the unit
- back pressure valve with position indicator for stopping the hydraulics unit (emergency stop) if the air pressure fails



GR-Swivel unit,
horizontal working position
with locking device



RC-Swivel unit,
horizontal working position

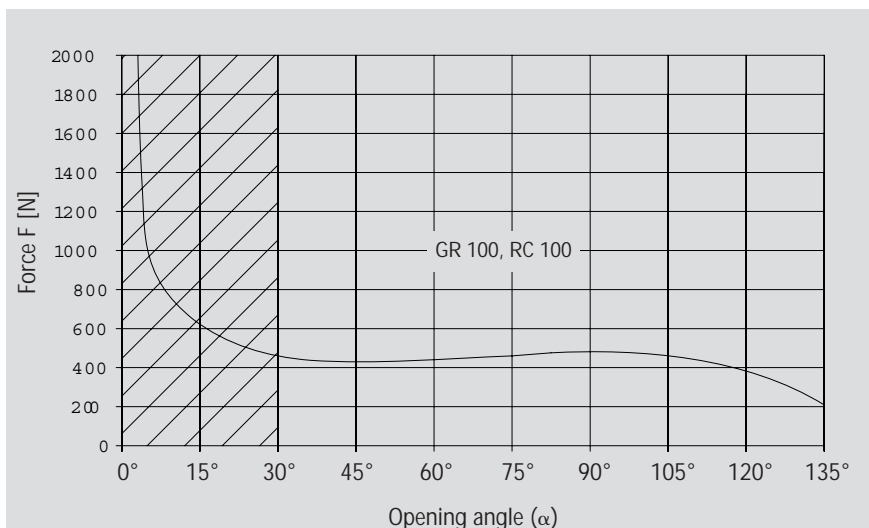
Model no.	Working position	Standard swivelling angle	Cylinder Ø [mm]	Torque	Weight ~ [kg]	Comments
GR100-135VPYGZ	vertical	135°	100	see diagrams	40	With locking device
GR100-1200PYGZ	horizontal	120°	100		40	
GR125-135VPYGZ	vertical	135°	125		80	
GR125-1200PYGZ	horizontal	120°	125		80	
GR160-135VPYGZ	vertical	135°	160		95	
GR160-1200PYGZ	horizontal	120°	160		95	
GR200-135VPYGZ	vertical	135°	200		120	Without locking device
GR200-1200PYGZ	horizontal	120°	200		120	
RC100-135VPYGZ	vertical	135°	100		29	
RC100-1200PYGZ	horizontal	120°	100		29	
RC125-135VPYGZ	vertical	135°	125		62	
RC125-1200PYGZ	horizontal	120°	125		62	
RC160-135VPYGZ	vertical	135°	160		77	
RC160-1200PYGZ	horizontal	120°	160		77	
RC200-135VPYGZ	vertical	135°	200	85		
RC200-1200PYGZ	horizontal	120°	200	85		

Complete cycle time is about 8 sec.

The cycle time depends on the adjustment of the flow valves, the moving angle of the lever, the pressure of the pneumatical supply and the load.

Diagrams of load

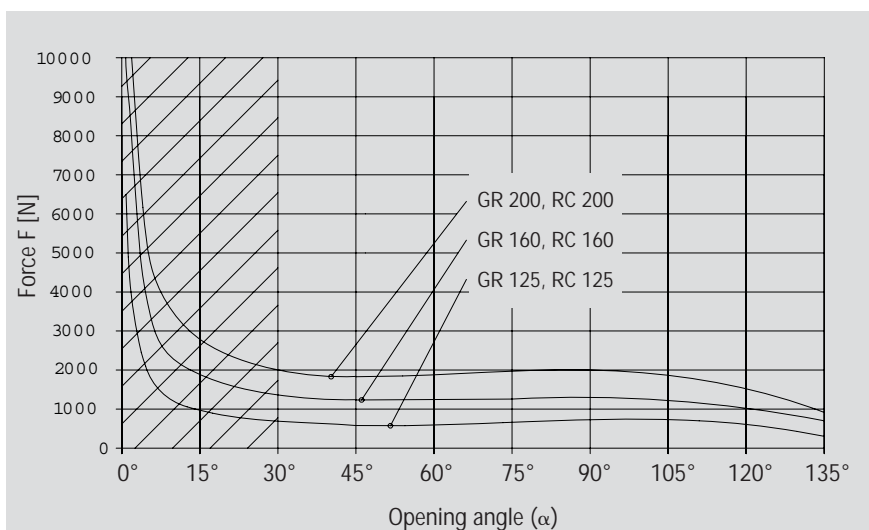
(values calculated at 0,5 m from pivot of rotation)



Warning

Make sure that the tilting device runs a complete working cycle and reaches the angle position at 0°.

(Any interference in the highlighted angle area may seriously damage both the tooling and the tilting device, as the result of the very high forces developed, as shown in the chart).



Series GR100/125/160/200

Technical data: swivel units GR100/125/160/200

Model no.	Working position	Standard swivelling angle	Piston Ø	Connection		D1	D2 H7	D3 Ø	D4 H7	R1	R2	B1	B2	B3 ±0,05	B4 ±0,3	B5	B6	B7 ±0,02 ¹⁾ ±0,1 ²⁾
				A1	A2													
GR100-135VPYGZ	vertical	135°	100	G1/2	G1/8	M12	10	M12	10	216	-	169	155	20	140	8	18	50
GR100-120OPYGZ	horizontal	120°	100	G1/2	G1/8	M12	10	M12	10	216	117	169	155	20	140	8	18	50
GR125-135VPYGZ	vertical	135°	125	G1/2	G1/8	M16	12	M16	12	276	-	212	190	25	170	10	20	70
GR125-120OPYGZ	horizontal	120°	125	G1/2	G1/8	M16	12	M16	12	276	126	212	190	25	170	10	20	70
GR160-135VPYGZ	vertical	135°	160	G3/4	G1/8	M16	12	M16	12	276	-	212	190	25	170	10	20	70
GR160-120OPYGZ	horizontal	120°	160	G3/4	G1/8	M16	12	M16	12	276	126	212	190	25	170	10	20	70
GR200-135VPYGZ	vertical	135°	200	G3/4	G1/8	M16	12	M16	12	276	-	212	190	25	170	10	20	70
GR200-120OPYGZ	horizontal	120°	200	G3/4	G1/8	M16	12	M16	12	276	126	212	190	25	170	10	20	70

Model no.	B8 ±0,1	B9	B10 ±0,02	B11 +0,2 +0,1	B12	B13	B14 ±0,1	B15 I	B16 ±0,1	B17	B18 I	B19 I	L1	L2 ±0,1	L3
GR100-135-VPYGZ	140	156	8	5	12	180	80	115	60	145	-	-	768,5	468,5	179
GR100-120-OPYGZ	140	156	8	5	12	180	80	115	60	145	-	-	758	458	179
GR125-135-VPYGZ	190	210	10	5	16	235	100	160	80	180	-	-	903	551	205
GR125-120-OPYGZ	190	210	10	5	16	235	100	160	80	180	-	-	895	543	205
GR160-135-VPYGZ	190	210	10	5	16	235	100	160	80	180	180	180	911	556	205
GR160-120-OPYGZ	190	210	10	5	16	235	100	160	80	180	180	180	904	549	205
GR200-135-VPYGZ	190	210	10	5	16	235	100	160	80	180	220	220	919	562	205
GR200-120-OPYGZ	190	210	10	5	16	235	100	160	80	180	220	220	912	555	205

Model no.	L4	L5 ±0,3	L6 ±0,1	L7 +0,1	L8 ±0,1	L9 ±0,1	L10 ±0,05	L11	L12 +0,05	L13 ±0,02 ¹⁾ ±0,1 ²⁾	L14 ±0,1	L15	L16	L17 ±0,3	L18 ±0,3
GR100-135-VPYGZ	110	25	50	80	15	50	40	280	30	90	30	136	20	-	-
GR100-120-OPYGZ	110	25	50	80	15	50	40	280	30	90	30	136	20	55	210
GR125-135-VPYGZ	150	35	70	90	20	50	45	327	30	120	45	185	24,5	-	-
GR125-120-OPYGZ	150	35	70	90	20	50	45	327	30	120	45	185	24,5	80	265
GR160-135-VPYGZ	150	35	70	90	20	50	45	327	30	120	45	185	24,5	-	-
GR160-120-OPYGZ	150	35	70	90	20	50	45	327	30	120	45	185	24,5	80	265
GR200-135-VPYGZ	150	35	70	90	20	50	45	327	30	120	45	185	24,5	-	-
GR200-120-OPYGZ	150	35	70	90	20	50	45	327	30	120	45	185	24,5	80	265

Medium: air, max. 8 bar

CAD and design templates available upon request

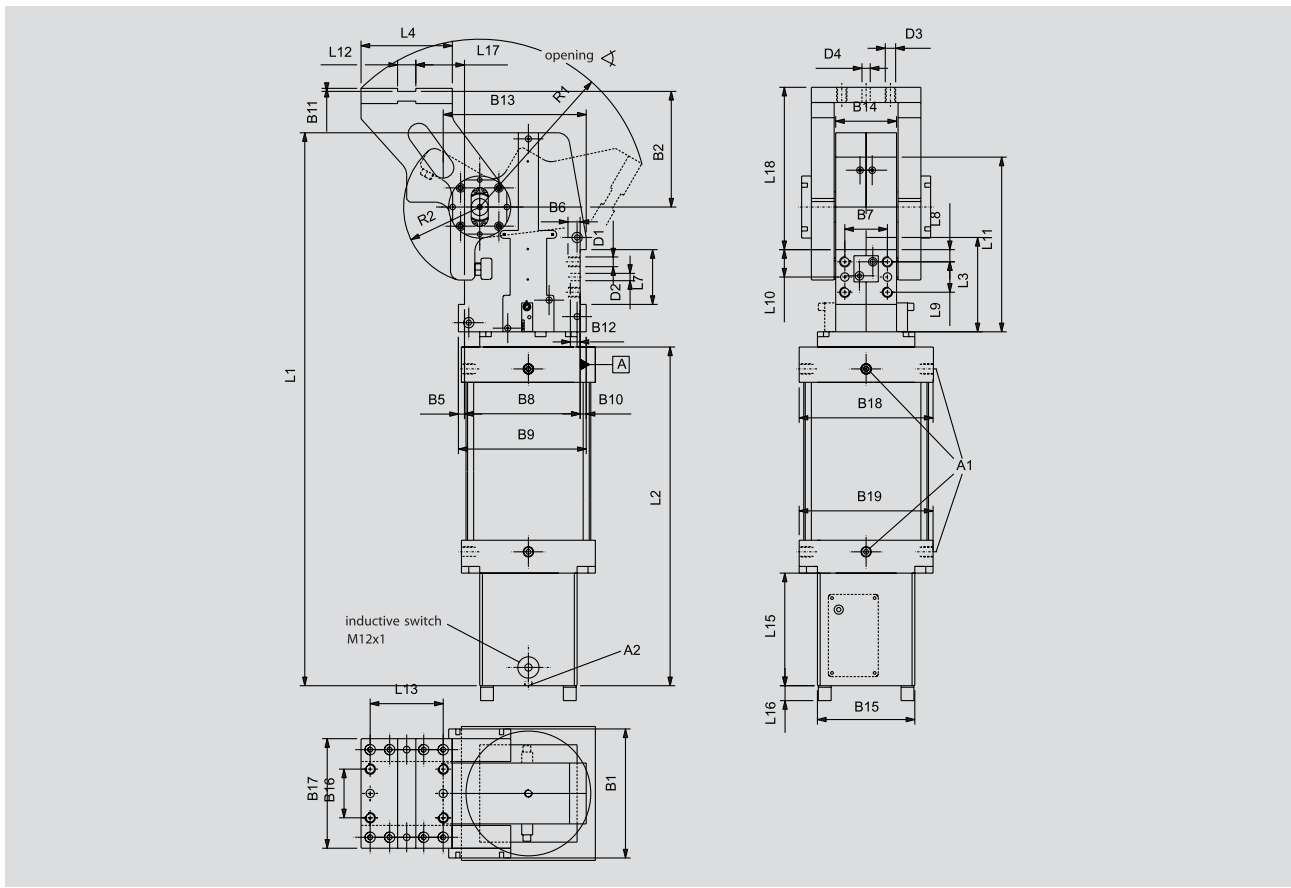
Operation with oil-free air is permissible

¹⁾ Tolerance for dowel holes

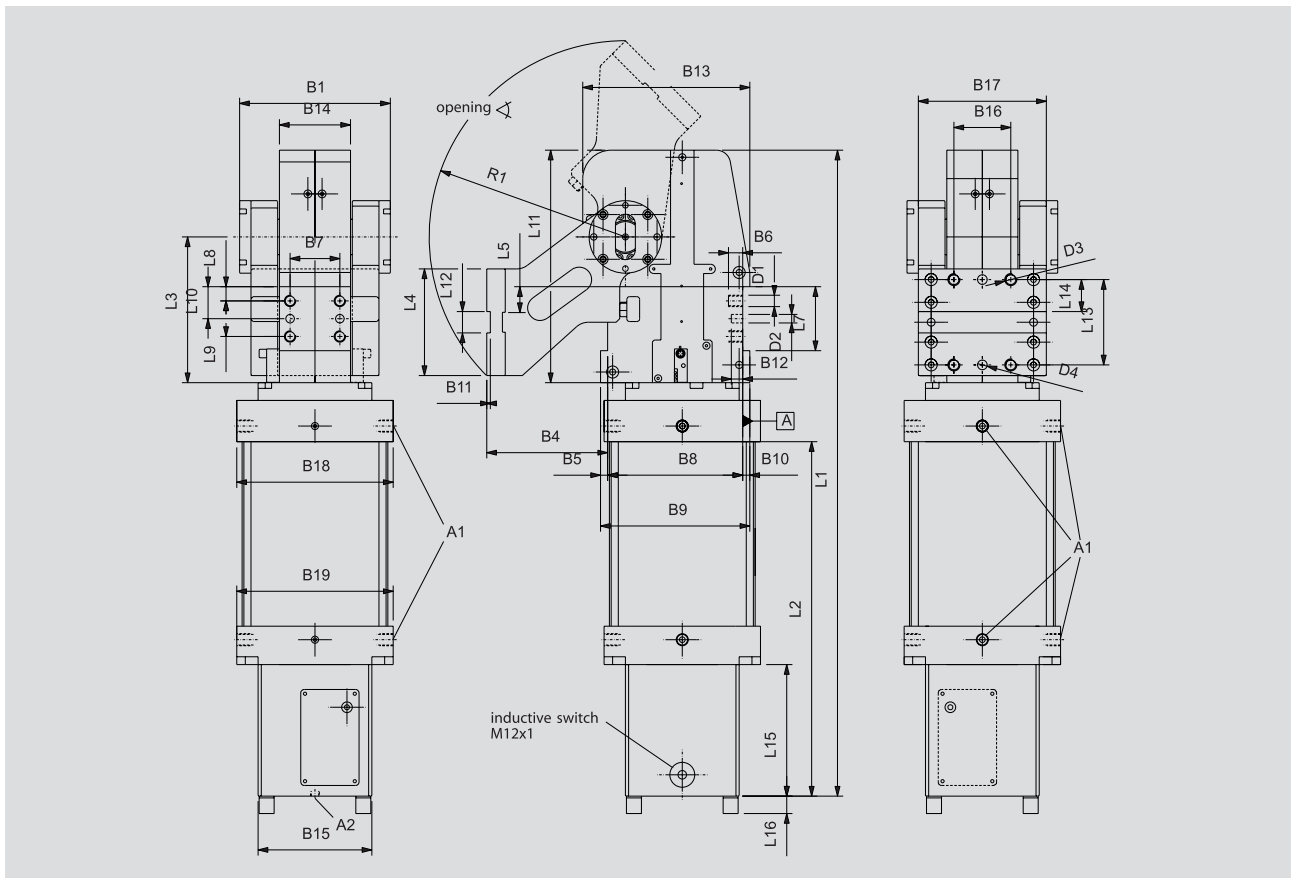
²⁾ Tolerance for tapped holes

Dimensioning of RC-Swivel units is identical except dimensions "L1" and "L2". (See page 18.14)

GR.....0... horizontal swivel unit



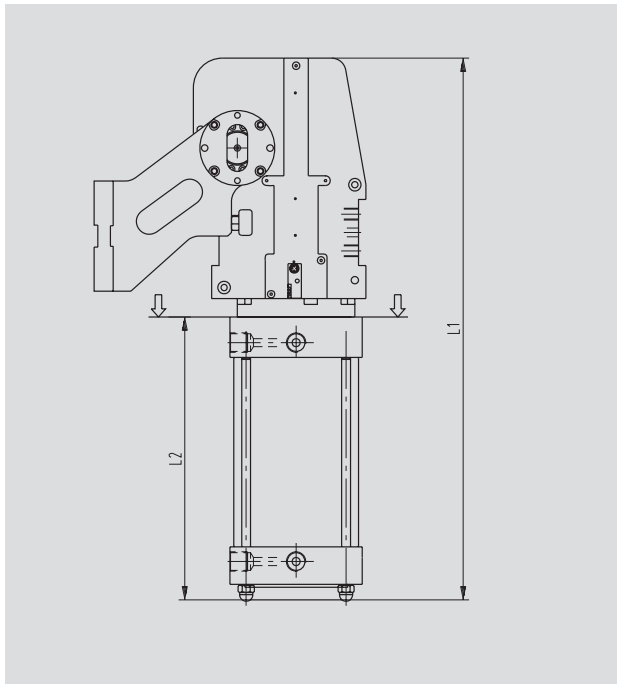
GR.....V... vertical swivel unit



Series GR100/125/160/200, RC 100/125/160/200

RC...-...VPYGZ

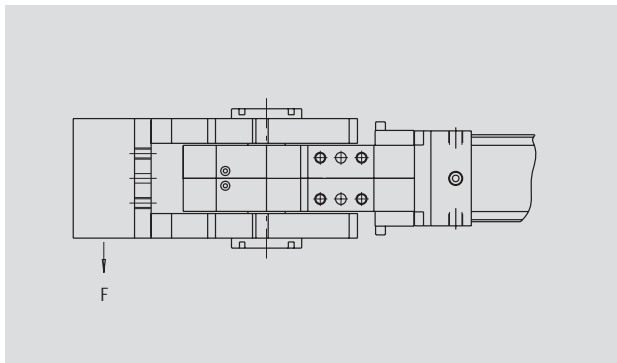
Dimensions



Modell-Nr.	L1	L2
RC100-135VPYGZ	657	352
RC100-120VPYGZ	641	341
RC125-135VPYGZ	741	389
RC125-120VPYGZ	733	381
RC160-135VPYGZ	749	394
RC160-120VPYGZ	742	387
RC200-135VPYGZ	754	398
RC200-120VPYGZ	747	390

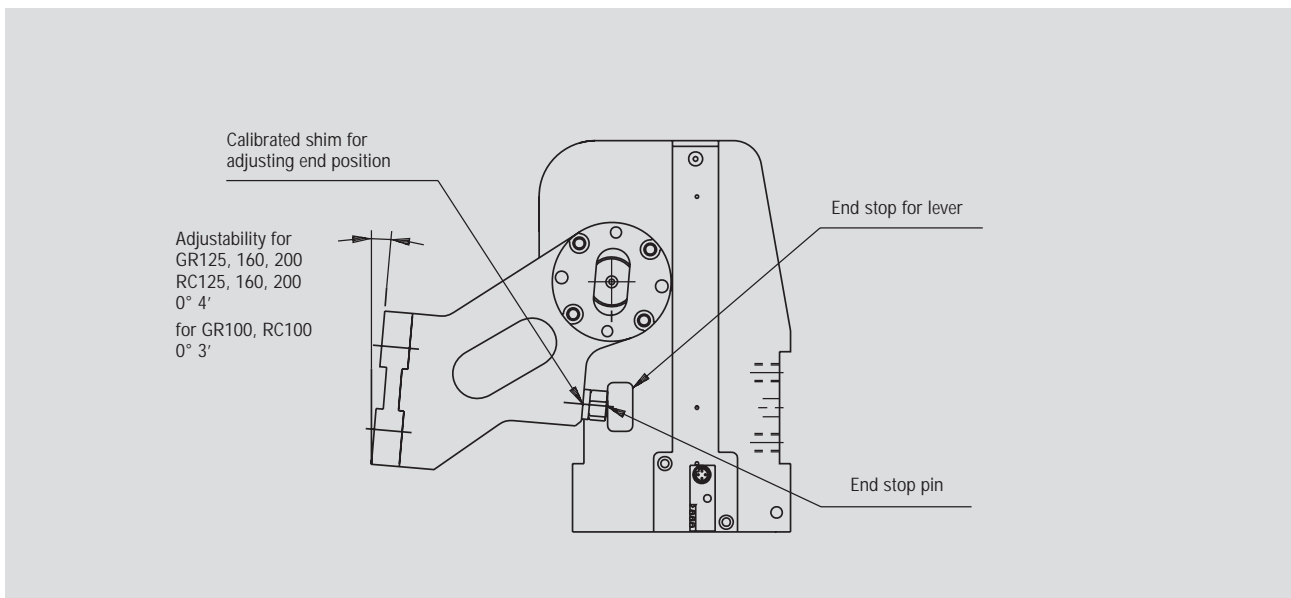
All other dimensions are identical with GR-Swivel units
(See page 18.12, 18.13)

Maximum permissible load parallel to center of drive shaft

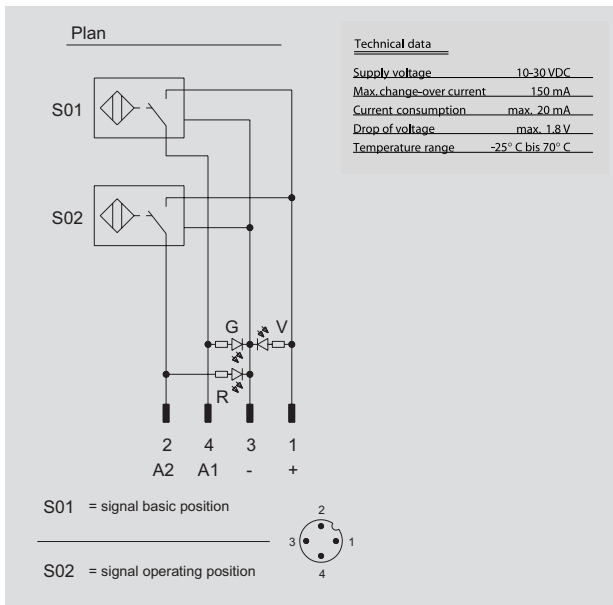


Model	maximum torque permissible (F in relation to center of drive shaft)
GR100, RC100	80 Nm
GR125, RC125	200 Nm
GR160, RC160	
GR200, RC200	

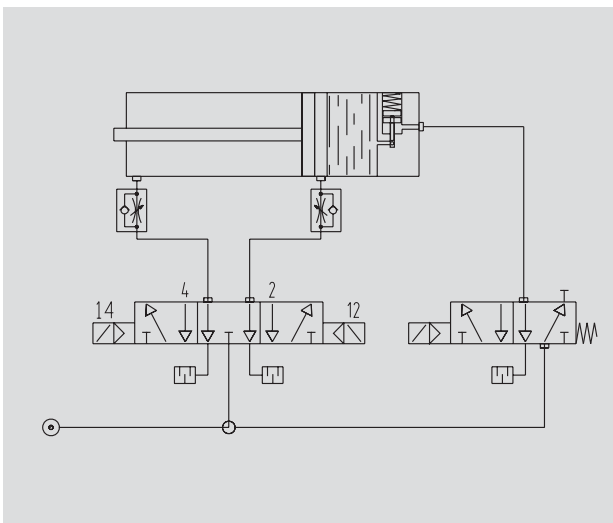
Adjustability of End-Stop



Wiring diagram of electrical sensing system

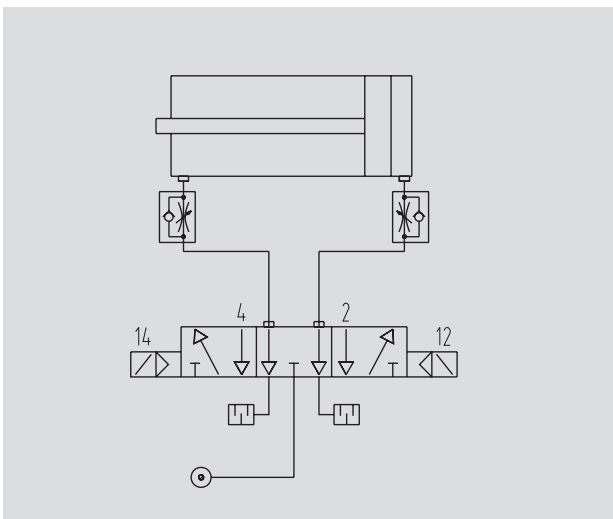


Pneumatics diagram for GR-Units



When operating the swivel unit you must ensure that the hydraulic damping unit is connected to the same hydraulic mains as the cylinder.

Pneumatic diagram for RC-Units



Model 87W99-202C500

■ Stamping clamp

Application:

Stamping numbers in mass production



Features:

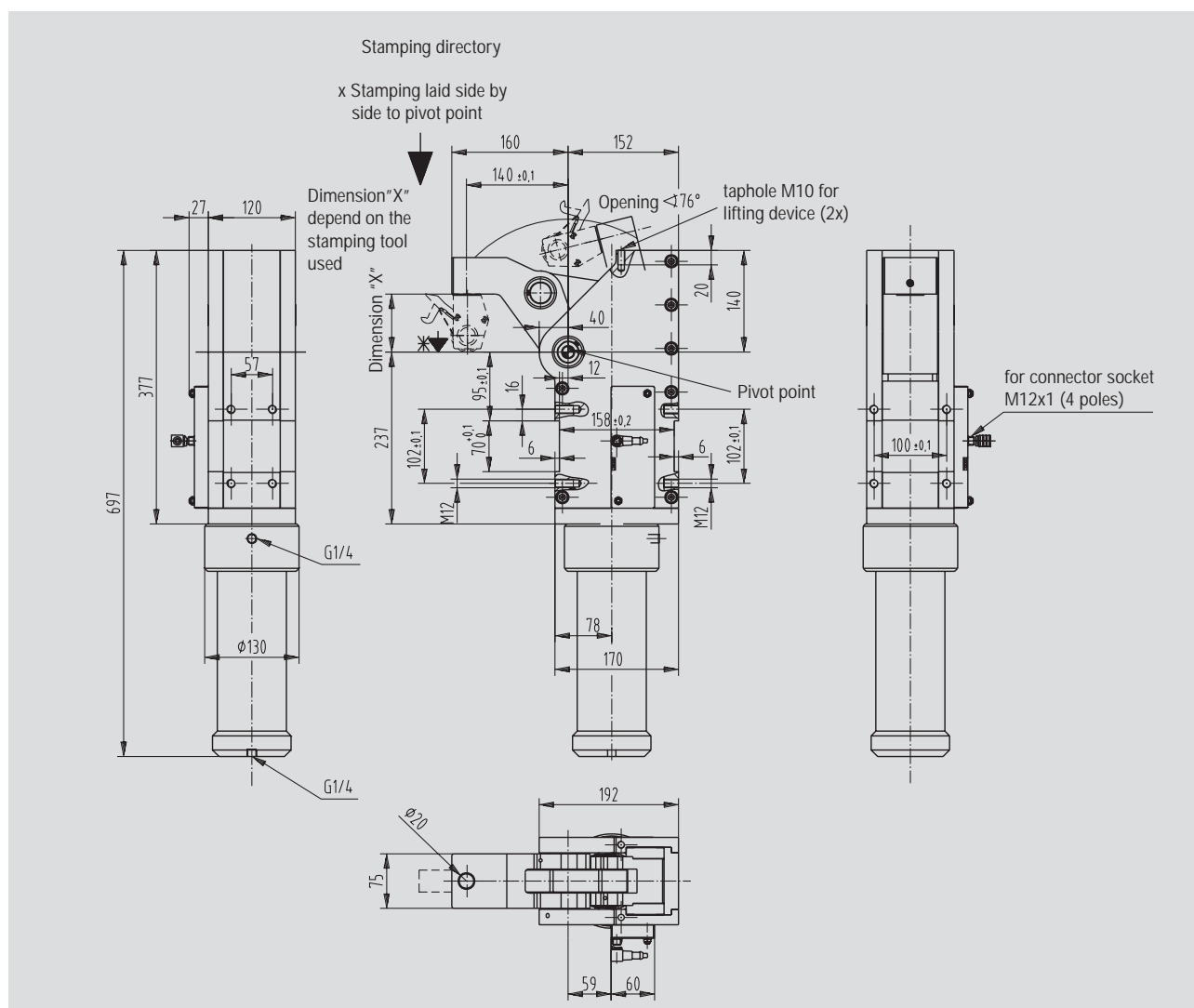
- compact design
- customers can install various stamp dies
- internal stop of clamping arm
- 2 mounting areas (front and rear)
- toggle action mechanism
- driven by pneumatic power cylinder

Technical data:

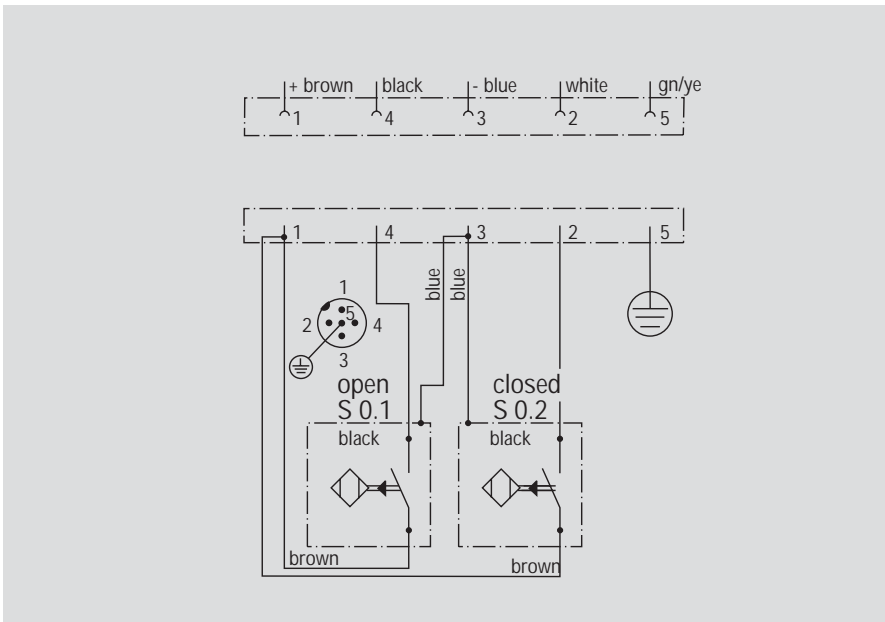
Opening angle	Stamping force	Weight
76°	4000 daN at 3,5 bar compressed air	55 kg

87W99-202C500 stamping clamp (shown with stamp die)

Stamping clamp 87W99-202C500 (stamp die not contained in delivery scope)



Medium: air, max. 3,5 bar; operation with oil-free air is permissible


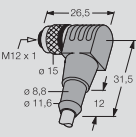


Wiring diagram of electrical sensing system

Sensing system immune to interference from d.c. arc welding and a.c. arc welding

- C5: inductive with LEDs, plug connector M12x1, fixed

Accessories

BSpecification	Order no. for 87W99-202C500
Connecting cable (1 connector socket & 5 m cable) Connector socket M12x1 straight, 5-pin 	8EL-002-1
Connector socket M12x1 angular, 4-pin 	8EL-003-1
Stamp die	upon request

Major spare parts

Specification	Order no. for 87W99-202C500
Cylinder	WK 20001009-1
Sensing system C5 Plug connector M12x1, fixed	8EA-021-2

Models 825-MRM, 991-MRM, 1091-MRM

- Automation power clamps for high temperatures, enclosed design

Models: 825-MRM
991-MRM
1091-MRM

Application:

Clamping, holding, gripping and positioning of components and tools.

Key areas of application:

The power clamp is designed for applications at permanent ambient temperatures of 260 °C and briefly (up to 10 minutes) at ambient temperatures of 370 °C.

Features:

- dirt-resistant
- compact, enclosed design in a steel body
- 2 lateral mounting areas
- toggle action mechanism
- cylinder with temperature-resistant polymer seals
- integrated lubricating nipples for greasing the mechanical parts from the outside
- use of temperature-resistant grease



825-MRM
base model with lateral clamping arm (left)



991-MRM
base model (without clamping arm)

Model no.	Clamping position	Standard opening angle	Driven shaft for clamping arm variants	Max. holding torque [Nm]	Clamping torque at 6 bar [Nm]	Cylinder Ø [mm]	Weight ~ [kg]
825-MRM	horizontal	90°	lateral, left	180	55	32	2,1
991-MRM	horizontal	118°	lateral and U-central	1250	390	63	8,3
1091-MRM	horizontal	98°	lateral	2000	700	80	14,5



991-MRM with U-type central clamping arm



991-MRM, 1091-MRM with lateral clamping arm (right)

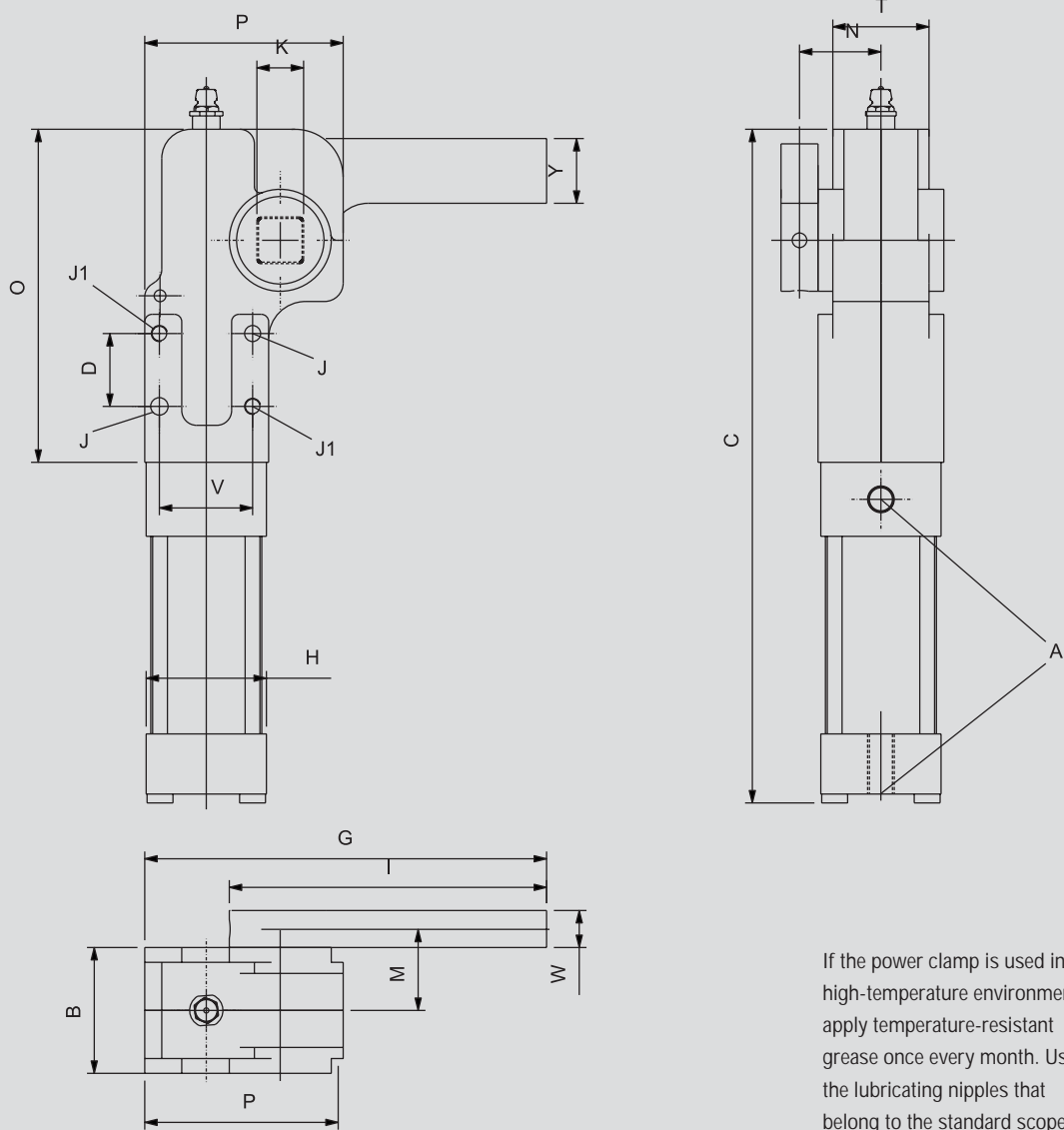
Accessories for 991-MRM, 1091-MRM

Specification		structural component	
		Order no. for set	
		991-MRM	1091-MRM
Clamping arm			
Clamping arm variant	Clamping position		
U-central	horizontal	8JG-069-1-01	–
lateral	horizontal	8JG-070-1-01	8JG-080-1-01
Grease		upon request	

Spare parts

Specification	Order no. for structural component		
	825-MRM	991-MRM	1091-MRM
Cylinder	825RM100	893132M-ET	1091MRM100
Seal kit	825RM1000100	8930100-ET	1091MRM100-ET

825-MRM



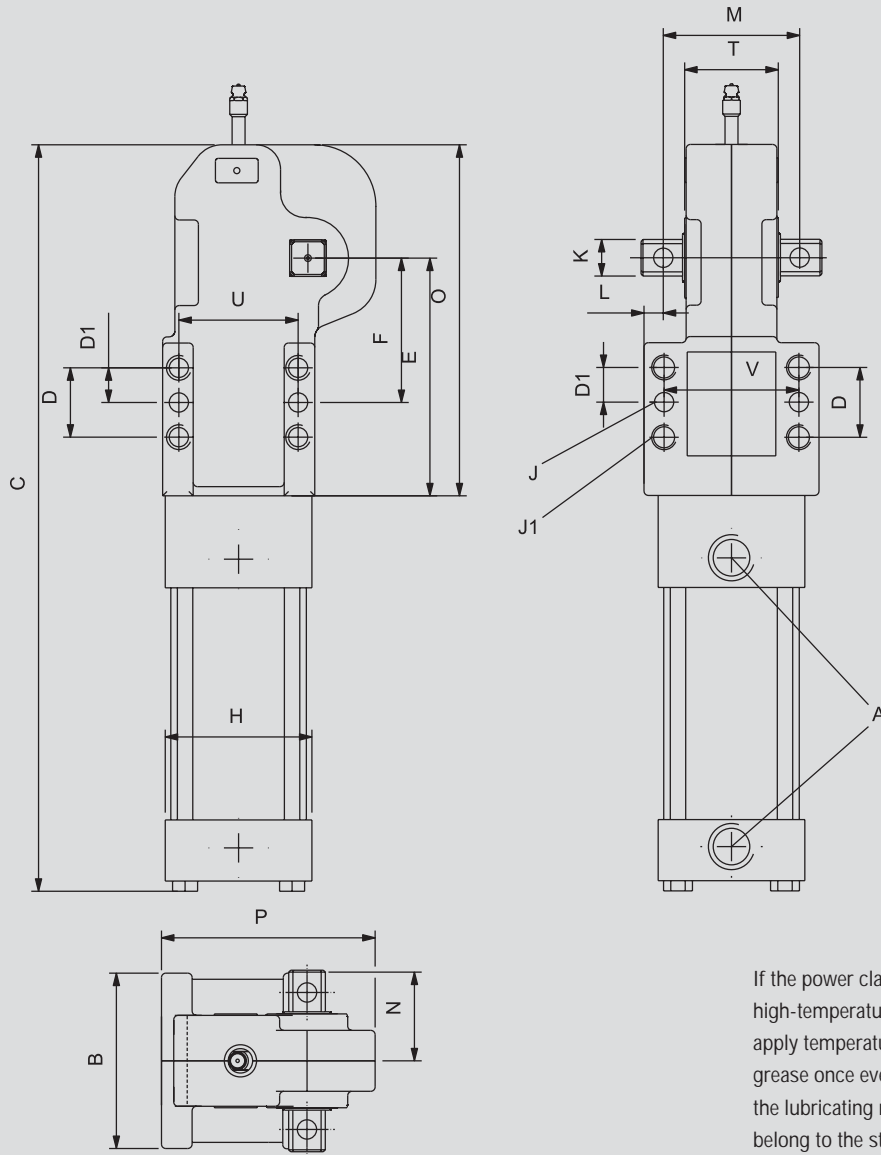
If the power clamp is used in high-temperature environments, apply temperature-resistant grease once every month. Use the lubricating nipples that belong to the standard scope of delivery.

Technical data: 825-MRM/991-MRM/1091-MRM

Model no.	A	B	C	D	D1	E	F	G	H	I	J	J1
825-MRM	G1/8	43	246	25	-	76	32	138	41	70	6	M6x1
991-MRM	G3/8	86	376	35	17,5	123	76,2	-	76	-	9,5	10,3
1091-MRM	G1/2	116	448	50	25	153	90	-	95	-	12	12,8

Model no.	K	L	M	N	O	P	U	V	W	Y	Y1
825-MRM	16	-	28	34	114	68	-	32	13	22	13
991-MRM	19	10	71	43	183	104	65	70	-	-	-
1091-MRM	22	10,2	94	59	232	137,9	90	90	-	-	-

991-MRM/1091-MRM



If the power clamp is used in high-temperature environments, apply temperature-resistant grease once every month. Use the lubricating nipples that belong to the standard scope of delivery.